Please insert header beginning on Page 1, after line 6 with the following header:

B2 **BACKGROUND OF THE INVENTION**

Please insert header beginning on Page 5, after line 2 with the following header:

SUMMARY OF THE INVENTION

B3

Please insert header beginning on Page 10, before line 1 with the following header:

B4 **BRIEF DESCRIPTION OF THE DRAWINGS**

Please replace the paragraph beginning on Page 10, line 26 with the following new paragraph:

B5 Figure 9 shows a view of the clamping mechanism with a circular clip holding the clamping arm on the adapter;

Please replace the paragraph beginning on Page 11, line 14 with the following new paragraph:

B6 Figure 19 shows a perspective view of an alternative reverse slip clutch;

Please insert header beginning on Page 11, after line 24 with the following header:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

B7

Please replace the paragraph beginning on Page 12, line 16 with the following new paragraph:

B8

The clamping mechanism is shown in a front view in Figure 2. The clamping mechanism comprises the clamping arm 40 and the slide element 30. The slide element 30 presents a supporting surface portion 32 which faces away from the front portion of the housing and which serves to support an object in a position below the saw blade 20 and while it is cut. A rod 44 is attached to the slide element 30 at a lower end portion thereof. The rotary one way clutch 42 is fitted to the outer end portion of the rod 44. The clamping arm 40 has a bore with an inner diameter so that it can be fitted onto the outer circumference of the one way rotary clutch 42. As will be described in more detail below, it is preferred that the clamping arm 40 is not directly connected to the rotary one way clutch 42 but via a further intermediate clutch.

Please replace the paragraph beginning on Page 12, line 31 with the following new paragraph:

As can be seen from Figure 2, the clamping arm 40 is held by the rod 44 in a position so that the plane of rotation of the clamping arm 40 is beyond the envelope of the housing, and the clamping arm 40 can freely rotate around 360° without interfering with parts of the housing. The slide element 30 may be a precision ball slide having an inner guiding part 31 which is attached to a guard member of the front portion of the housing. The slide element or table 30 is slideable with respect to the guide element 31 by two sets of ball rollers (not shown) which are retained in raceways on

B9

both sides of the guide element 31 between the guide element 31 and the slide element 30 which can thereby perform a linear sliding movement (in the directions of the arrow L in Figure 1 and 2). The direction of linear movement is aligned with the cutting direction (shown by the arrow C in Figures 1 and 2) of the saw blade 20.

B9

Please replace the paragraph beginning on Page 13, line 15 with the following new paragraph:

The rotary one way clutch can be of a type known as a drawn cup roller clutch. These clutches are annular rings which can be fitted over a shaft. They have a thin walled drawn outer ring which has a series of ramps on its inside diameter. Needle rollers, which are retained and guided by a plastic cage, form the clamping elements. The needle rollers are held in the locked/unlocked position by springs. The frictional moment during idling of drawn cut roller clutches is very low so that the clutch can very easily be rotated in one direction whereas it can withstand a relatively much higher reverse torque before the clutch is damaged.

B10

Please replace the paragraph beginning on Page 14, line 1 with the following new paragraph:

B11

In operation of the saw, the reciprocating movement of the reciprocating shaft 14 and the saw blade 20 induces vibration of the saw as a whole because of the inertia of the reciprocating parts. This vibration is even stronger when the gripping portion 3 is not aligned with the reciprocating parts so that an oscillating torque is induced when the user holds the saw at its gripping portion 3. The vibration of the saw

is also transferred to the slide element 30. Thus, the one way rotary clutch 42 also vibrates. Since the clamping arm 40 has a moment of inertia with respect to this axis of rotation of the one way rotary clutch 42, the vibrations are transformed into a stepwise, progressive rotational movement of the clamping arm 40, the clamping arm 40 making one incremental rotational movement in each back and forth movement of the vibration of the saw. Therefore, when the saw is in operation, the clamping arm 40 progressively turns in its direction of free rotation (clockwise in Figures 3a and 3b).

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Please replace the paragraph beginning on Page 14, line 20 with the following new paragraph:

B12

When the saw is held to a object to be sawn, e.g. a branch 50, so that the branch 50 abuts to the supporting surface 32 below the saw blade 20, the rotational movement of the clamping arm 40 induced by the vibration of the saw, automatically closes the clamping mechanism, thereby clamping the branch 50 between clamping arm 40 and supporting surface 32 as shown in Figure 3b. In this position further rotational movement of the clamping arm 40 is prevented by the branch 50. Then, the user moves the saw as a whole down with respect to the branch 50 in the direction of cut (C) to bring the sawing blade 20 into contact with the branch 50 and to move the reciprocating saw blade through the branch 50. During this movement the sliding element 30 performs its linear sliding movement relative to the cutting blade 20 in a direction opposite to the direction of cut since it is clamped to the branch 50. Thus, the branch is guided across the blade 20 and is accurately cut.

Please replace the paragraph beginning on Page 15, line 27 with the following new paragraph:

An alternative design of adapter 100' comprising means for attachment to a reciprocating saw 105 is shown in Figure 7. The adapter 100' comprises two resilient arms 130, 131 which project away from the clamping arm 101' substantially parallel to the axis 112 of rotation of the clamping arm 101'. A ramp 132, 133 is formed on the outer edge of each arm 130, 131. The ramps 132, 133 commence near the end of each arm 130, 131 35 and curve outwardly towards the clamping arm 101'. The ends of the ramps 132, 133 form ledges 134, 135. The distance between the two arms 130, 131 corresponds to the width of the slots 103, 104.

Please replace the paragraph beginning on Page 16, line 5 with the following new paragraph:

The adapter 1001' is attached to the front of the reciprocating saw 105 by sliding the two arms 130, 131 into the two slots 103, 104. As the arms 130, 131 slide into the slots 103, 104 the metal plate 128 which forms the edge of the first slot 103 engages with and slides along the ramps 132, 133, causing the two arms 130, 131 to bend inwardly towards each other. When the ramps 132, 133 on the two arms 130, 131 have passed through the first slot 103 the two arms 130, 131 spring outwards, the ramps 132, 133 entering into the space between the two metal plates 128, 129 to clip the adapter onto the front of reciprocating saw 105. The adapter 100' is prevented from sliding any further by a connecting section 136 of the adapter 101' abutting against the housing of the reciprocating saw 105.

Please replace the paragraph beginning on Page 16, line 20 with the following new paragraph:

The adapter 101' is prevented from sliding out of the slots 103, 104 by the edge of the metal plate 128 which forms the first slot 103 blocking the path of the ledges 134, 135. In order for the adapter 101' to be removed or unclipped from the slots 103, 104, the two arms 130, 131 must be bent inwardly towards each other in order to move the ledges 134,135 to positions where the edge of the metal plate 128 would not block their paths when the adapter 101' is withdrawn from the slots 103, 104.

Please replace the paragraph beginning on Page 16, line 30 with the following new paragraph:

A slot 106, 106' has been formed in the adapter 100, 100' so that when the clamping mechanism is attached to the reciprocating saw 105, the blade 107 of the saw 105 is able to freely pass through the slot 106. At the side of the adapter 100, 100' is a hole 108 (see Figure 8) through which a spindle 109 passes. The clamping arm 101 is attached to the spindle 109 via the one way clutch 102. The two embodiments shown in Figures 4-9 are similar and will be described in terms of one of the embodiments. The clamping arm 101 is mounted onto the one way clutch 102 and the one way clutch 102 is press fitted onto the spindle 109 so that the clamping arm 101 is not able to rotate relative to the spindle 109 in the direction opposite to the direction of free rotation of the one way clutch 102. A part circular clip 137, as shown in Figure 9, fits into a corresponding groove 138 formed around the circumference of the end of the spindle

109 to hold the clamping arm 101 and the one way clutch 102 on the spindle 109. The end 110 of the spindle 109 is covered by a cap 111. As an alternative to the part circular clip 137, two resilient protrusions (not shown) integrally formed with the clamping arm 101 can project into the groove 138 to hold the clamping arm 101 and the one way clutch 102 on to the spindle 109. The spindle 109 is able to rotate within the hole 108 when sufficient rotational torque is applied to the spindle 109. The spindle 109 is unable to slide axially within the hole 108. The spindle 109 and the hole 108 together form a secondary reverse slip clutch which shall be described in greater detail further below.

B16

Please replace the paragraph beginning on Page 18, line 10 with the following new paragraph:

In operation, the clamping mechanism is attached to a reciprocating saw. When the saw is activated, the saw 105 as a whole vibrates because of the inertia of the reciprocating parts. The vibration of the saw 105 is transferred to the adapter 100. Thus, the adapter 100 together with the one way rotary clutch 102 also vibrates. The vibrational movement of the adapter 100 is transferred to the clamping arm via the one way rotary clutch 102. Since the clamping arm 101 has a moment of inertia about the axis rotation 112 of the one way rotary clutch 102, the vibrations are transformed into a stepwise, progressive rotational movement of the clamping arm 101, the clamping arm 101 making one incremental rotational movement in each back and forth movement of the vibration of the saw 105. Therefore, when the saw 105 is in operation, the clamping arm 101 progressively turns in its direction of free rotation (shown by arrow A).

B17

Please replace the paragraph beginning on Page 19, line 17 with the following new paragraph:

Referring now to Figures 13 to 15, the curvature of the holding surface 118 of the clamping arm 101 and the location of the axis 112 of rotation of the clamping arm 101 are such that when a pole 119 of circular cross section is first cut by the reciprocating blade 107, the tangent 120 to the surface 121 of the pole 119 at the point 122 on the surface 121 where the clamping arm 101 first makes contact with the pole 119 is at an angle 123 of 45° to a plane 124 (as shown in Figure 16) which passes through the length of the blade 107. The pole 119 is used as it represents a branch 114 with an ideal shaped cross-section i.e. circular. The plane 124 which passes through the length of the blade 107 is shown in Figure 16 and is at 90° to the plane 113 of the blade 107. When a large diameter pole is cut, a different part of the holding surface 118 of the clamping arm 101 makes contact with the pole 119 when it is initially cut by the cutting edge 116 of the blade 107. However, due to the shape of the holding surface 118 of the arm, the tangent 120 of the circumference 121 at the point 122 where the clamping arm 101 first makes contact with the pole 119 is always 45° to the plane 124 through the length of the blade 107. The pole shown in Figure 11 has a smaller diameter than that shown in Figure 14 which in turn is smaller than in Figure 15.

B18

Please replace the paragraph beginning on Page 21, line 33 with the following new paragraph:

B19

An alternative form of reversing mechanism is disclosed in the second embodiment (see Figures 4 to 9). The hole 108 in the adapter 100 into which the

spindle 109 is inserted has a slot 127 cut from the hole 108 to the edge of the adapter (see Figure 6a, 6b and 7). The spindle 109 is located within the hole 108. The diameter of the hole 108 is slightly greater than the diameter of the spindle 109. A 'C' clip 126 is then placed across the end of the slot 127. See Figure 6b which shows an exploded view of the "C" clip and the slot. The 'C' clip 126 exerts a pressure across the slot 127 causing it to close. This reduces the diameter of the hole 108 and thus the edge of the hole squeezes the spindle 109. This generates a frictional force between the spindle 109 and the edge of the hole 108. The spindle 109 is therefore only able to rotate when a sufficient rotational torque is applied to the spindle 109 to overcome the frictional force between the spindle 109 and the edge of the hole 108. The amount of frictional force between the spindle 109 and the edge of the hole 108 is dependent on the strength of the 'C' clip 126.

B19

Please replace the paragraph beginning on Page 22, line 18 with the following new paragraph:

B20

However, from a manufacturing point of view, it creates difficulties to provide these reversing mechanisms which hold a reverse torque of a specified value in a reproducible manner. Therefore, a reverse slip clutch mechanism can be utilised, as shown in a simplified and schematical manner in Figure 18. In Figure 18, the rotary clutch 300 is fitted onto the rod 301. The rod 301, is rigidly attached to a saw or adapter. On the cylindrical outer surface of the rotary one way clutch 300, a part 302 can be fixed, made for example of glass filled nylon or by diecasting or sintering, having a corrugated outer surface. The inner diameter of the bore of the clamping arm 303 is

larger than the largest outer diameter of the reverse slip clutch part 302. From the inner surface 304 of the bore of the clamping arm 303 flexible protrusions 305 extend which interact with the corrugations 306 of the reverse slip clutch part 302. The protrusions extend non-radially into the bore and are flexible so that the clamping arm 303 may slip in one direction when a torque is applied above a predetermined torque in threshold value (in counter clockwise direction in Figure 18) by bending the protrusions 305 so that they can move across the corrugations 306, whereas rotation in the other direction would require a much higher torque. By specifying the dimensions and flexibility of the protrusions 305 the characteristics of the reverse slip clutch, in particular the torque threshold value, beyond which a slipping rotation of the clutch is possible can be adjusted to the desired values. The threshold torque value of the reverse slip clutch should exceed the maximum torque values which could be exerted on the clamping arm by the object while it is sawn.

B20

Please replace the paragraph beginning on Page 23, line 14 with the following new paragraph:

B21

An alternative design for a reverse slip clutch is disclosed in Figures 19 and 20a and 20b.

Please replace the paragraph beginning on Page 23, line 17 with the following new paragraph:

B22

The reverse slip clutch comprises a shaft 400 which is rotatable about its longitudinal axis 401. The shaft 400 is connected to a clamping arm via a rotary one

way clutch. A groove 402 runs along part of the length of the shaft 400. A flat leaf spring 403 is located in and is attached at its ends to the adapter 100. The flat leaf spring 403 is bent to form a tooth 404. The tooth 404 is arranged so that it projects into the groove 402 when the shaft 400 is rotated so that the groove 402 faces the tooth 404. When the tooth 404 is located within the groove 402 and a low rotational torque is applied to the shaft 400 the tooth 404 restrains the movement of the groove 402 and thus prevents the shaft 400 from rotating (see Figure 20a). However, when a rotational torque greater than a predetermined level is applied to the shaft 400 the tooth 404 is forced out of the groove 402 flexing the spring 403 and allowing the shaft 400 to rotate (see Figure 20b), The predetermined level of rotational torque is determined by the stiffness of the spring 403.

Please replace the paragraph beginning on Page 24, line 1 with the following new paragraph:

In addition to the reversing mechanism, the tip region 501 of the clamping arm 500 can have a curvature in the plane of the clamping arm which is in a reverse direction to that of the holding surface 506 of the clamping arm, as shown in Figure 21. This enables branches to be removed from the clamping arm 500 more easily. The direction of curvature (Y) of the tip region 501 of the clamping arm 500 is opposite to the direction of curvature (X) of the holding surface 506. This prevents the clamping arm 500 from being snagged on larger branches 503 being cut by the reciprocating blade 504 of the saw 505 as shown in Figure 22.

Please delete the Abstract Section of the specification and replace it with the following abstract in clean form. Applicant includes herewith an Attachment for Specification Amendments showing a marked up version of the previous version of the Abstract Section.

ABSTRACT

POWERED RECIPROCATING SAW AND CLAMPING MECHANISM

The invention relates to a powered reciprocating saw, in particular to a pruning saw. To simplify use of the saw a clamping mechanism is provided which holds an object in position while it is sawn. The clamping mechanism is mounted at the front of the housing of the saw near the saw blade. The clamping mechanism comprises: a slide element for sliding movement in the cutting direction, a supporting member; and a clamping arm 40 being rotatably mounted on the slide element, by a one way rotary clutch such that the arm can freely rotate in one direction only, in which direction the clamping arm moves towards the support member to clamp an object therebetween in a clamping position below the saw blade for sawing it. When the saw is in use, it vibrates. Since the clamping arm has a moment of inertia with respect to the axis of rotation of the one way rotary clutch, the oscillating movement is transformed into a stepwise, progressive rotational movement of the clamping arm which thereby closes to clamp an object.